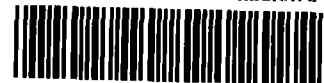


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

US EPA RECORDS CENTER REGION 5



515024

DATE: 20 MAY 1982

SUBJECT: Reilly Tar Case: Expert Witnesses

FROM: Robert E. Leininger *RL*

TO: File

*Nice
update
in a few
weeks
& route
again
by*

Pursuant to a contract with Life Systems Incorporated the case assignees were provided with the resumes and selected publications of three potential expert witnesses in the field of toxicology and three in the area of chemistry, particularly with an emphasis on PAH compounds and other derivatives of coal tar and creosote oil.

The chemists were interviewed on May 12 via a conference call which was set up by Bob Rosing of Life Systems. Although some people were unable to attend all of the interviews, those present were Bob Leininger, David Taliaferro, Erica Dolgin, Mike Kosakowski, Mary Bielefeld (EPA HQ), Steve Shakman, Mike Hansel (MPCA) and Marc Hult (USGS). All of the potential experts had been provided with a short history of the site as well as two tables which showed the levels of PAH found in some drinking water wells which were taken out of service. The three chemists whom we interviewed were David Warshawsky, Julian Andelman and Brenda Kimble.

1. Dr. David Warshawsky

He stated that many of the compounds found in the drinking water wells have not yet been found to be carcinogenic and suggested that we may have a stronger case by focusing on the mixtures of compounds in the water. This is because some compounds, such as alkanes which were found in the water, while not being biologically active have a synergistic effect when combined with PAH's. He also said that heterocyclic aromatics have been found to be active in Ames tests and some are known carcinogens. For example, nitrogen substituted heterocycles are more mobile, more toxic and more water soluble than PAH's. Mark Hult said that USGS had identified as much as 100 ppb of heterocyclic aromatics in the highly contaminated drift aquifer. (Heterocyclic aromatics are similar to PAH's but have one or more oxygen, nitrogen or sulfur atoms as a substitute for hydrogen atoms in the molecule).

Warshawsky then discussed the mechanism for degradation of PAH compounds in the environment. He said that there would be some oxidation as well as biodegradation by bacteria but not in significant amounts without the presence of light. He also said that while phenols, benzene and naphthalene are more mobile and soluble than PAH's, they show up in much lower concentrations because they are being degraded anaerobically.

Warshawsky said that the detection levels of PAH's are in the low parts per trillion if the methodology is correct. There is no single widely used method although his preferred technique is to use fluorescence.

Conclusions

I was favorably impressed with Dr. Washawsky's ability to answer questions in a clear and concise manner. Based upon a review of his resume, from reading his publications and from the interview I think that this man can be valuable as an expert witness in the following areas:

1. Describing the process by which PAH and other toxicants result from the products of coal tar distillation
2. Describing how such products break down in the environment.

Although he is not a biochemist or toxicologist he has written about the mechanism whereby PAH compounds react with the body to cause cancer. The National Cancer Institute also provided funding for him to study heterocyclic aromatics. We need to explore how his expertise in this respect may be used in conjunction with a toxicologist. Warshawsky also may be helpful in providing guidance for developing protocols for the analysis of PAH's and other compounds at very low levels.

Although he has never testified in court before he has done much public speaking and is confident that he would perform well at trial.

2. Dr. Julian Andelman

Although he has not done research in the area of PAH's since the 1970's he advises EPA on PAH's, among other things, as a consultant to the EPA Environmental Criteria and Assessment office. He stated that he could help us with his expertise on PAH's in the environment. He seemed to have a fairly broad interest in PAH's and was willing to discuss the chemical aspects of PAH in transport, treatment and in human health. He did not seem to have the same depth of knowledge as Warshawsky or Dr. Brenda Kimble (the 3rd chemist). I also felt that he was somewhat evasive when I asked him about certain statements which he made in his earlier publications. He has had no experience with litigation.

Conclusions

Dr. Andelman has excellent credentials but in the past several years does not seem to have been recently heavily involved with the specific types of technical issues facing us in this case. Consequently, he seemed to be floundering a bit in his answers. Life Systems Inc., failed to send us Dr. Andelman's list of publications but we should have it within a few days. We generally reached the conclusion to forego the second interview of Andelman in St. Paul. We asked Kosakowski to tell him that we don't presently need him but that later on we may use him as a consultant.

3. Dr. Brenda Kimble

Her main area of expertise lies in the analysis and quantification of organic materials. She has had good experience in the analysis of PAH and related compounds. Although she has never testified as an expert in a lawsuit, she has testified at a number of hearings before various commissions in California. Marc Hult asked her a number of questions relating to analytical methodologies and she seemed very knowledgeable and articulate in her answers. She didn't hesitate to say that some of the analytical methods (such as EPA method 610 which was used by MDH) can be improved upon.

Aside from her obvious expertise in the field she also seems to have a great deal of credibility. Her opinion is that it is better to have smaller amounts of very accurate data than large amount of less accurate data. She suggested that the MDH data would make good survey data but that it needs to be backed up and verified by highly accurate reproducible data.

Conclusions

Dr. Kimble came across as having a great deal of expertise in the field of analytical chemistry. She also has a very impressive resume. I believe that she would be very helpful in making sure that the data we introduce as evidence will stand up in court. This is a very important factor in the case because of the trace amounts of chemicals with which we are dealing. I think she would be valuable both as a consultant and as an expert.

The following documents will be sent to the experts for their review.

- the amended complaint
- the Barr Report
- Steve Rieds briefing memo on the Reilly Tar process
- the Hickok report
- the MRI data and GCA data
- representative sample analyses from the state and USGS

We have set a tentative date of June 9 and 10 to meet with Dr. Warshawsky, Dr. Kimble and Dr. Warren Thompson (our wood science expert) in Minnesota for further interviewing. Marc Hult will also at that time present his report on his findings at the site.

Telephone interviews of the toxicologists will take place on Thursday or Friday, May 20 or 21. We will try to arrange to also have one or more of them in Minnesota on June 9th and 10th for the second interview.

cc: Ullrich
Gardebring
Grimes
~~Schuttels~~/Walker

Taliaferro
Bartelt
Bitter